

Attorney Docket No.: 0120101  
Application Serial No.: 10/054,359

**List of Claims:**

**Claims 1-13 (Cancelled)**

**Claim 14 (Original):** A method for generating a head related transfer function,

comprising:

downconverting each of a plurality of measured impulse responses from a first sampling frequency to a second sampling frequency;

converting each downconverted impulse responses to a set of head related transfer functions;

performing coordinate conversion on each set of head related transfer functions;

averaging the converted sets of head related transfer functions to generate one average set of head related transfer functions; and

decimating the average set of head related transfer functions to fit a filter engine of a target system.

**Claim 15 (Original):** The method of claim 14, wherein converting each downconverted impulse responses to a set of head related transfer functions comprises generating a pair of head related transfer functions from the measured impulse responses for each grid point in a coordinate system.

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**Claim 16 (Original):** The method of claim 15, wherein performing coordinate conversion on each set of head related transfer functions comprises performing coordinate conversion on the sets of head related transfer functions, and wherein performing coordinate conversion on the sets of head related transfer functions includes performing linear interpolation on the sets of head related transfer functions.

**Claim 17 (Original):** The method of claim 14, further comprising dividing the converted sets of head related transfer functions into demographically defined groups and generating an average set of head related transfer functions for each group.

**Claim 18 (Original):** The method of claim 14, wherein decimating the average set of head related transfer functions includes using Fourier transform techniques and a sliding filter window.

**Claim 19 (Original):** The method of claim 18, wherein decimating the average set of head related transfer functions further includes using a minimum mean squared estimation.

**Claim 20 (Original):** The method of claim 14, further comprising normalizing the decimated average set of head related transfer functions.

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**Claim 21 (Original):** A computer readable medium having stored thereon one or more sequences of instructions for causing one or more processors to perform steps for generating a head related transfer function, the steps comprising:

downconverting each of a plurality of measured impulse responses from a first sampling frequency to a second sampling frequency;

converting each downconverted impulse responses to a set of head related transfer functions;

performing coordinate conversion on each set of head related transfer functions;

averaging the converted sets of head related transfer functions to generate one average set of head related transfer functions; and

decimating the average set of head related transfer functions to fit a filter engine of a target system.

**Claim 22 (Original):** The computer readable medium of claim 21, wherein converting each downconverted impulse responses to a set of head related transfer functions comprises generating a pair of head related transfer functions from the measured impulse responses for each grid point in a coordinate system.

**Claim 23 (Original):** The computer readable medium of claim 22, wherein performing coordinate conversion on each set of head related transfer functions comprises performing coordinate conversion on the sets of head related transfer functions, and wherein performing

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coordinate conversion on the sets of head related transfer functions includes performing linear interpolation conversion on the sets of head related transfer functions.

**Claim 24 (Original):** The computer readable medium of claim 21, further comprising the step of dividing the converted sets of head related transfer functions into demographically defined groups and generating an average sets of head related transfer functions for each group.

**Claim 25 (Original):** The computer readable medium of claim 21, wherein decimating the average set of head related transfer functions includes using Fourier transform techniques and a sliding filter window.

**Claim 26 (Original):** The computer readable medium of claim 25, wherein decimating the average sets of head related transfer functions further includes using a minimum mean squared estimation.

**Claim 27 (Original):** The computer readable medium of claim 21, further comprising the step of normalizing the decimated average sets of head related transfer functions.

**Claims 28-34 (Cancelled)**